DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 1-6) in the reply filed on 4/12/11 is acknowledged. The traversal is on the ground(s) that "the Examiner has not shown that a search of the entire application would cause a serious burden". This is not found persuasive because of the reasons made of record in the previous Office action, in which no special technical feature exists for Group I as defined by PCT Rule 13.2 for this 371 application, and because PCT Rule 13 does not provide for multiple products or methods within a single application; especially when no "special" technical feature exists. Nevertheless, it should be emphasized that lack of coextensiveness of the search and examination for each group would constitute an undue burden on the examiner to search and consider all the separable groups with their recognized divergent subject matter, and because each product and each method is not required in order for the other to exist, which importantly involves different search parameters and considerations. The requirement is still deemed proper and is therefore made FINAL.

Claims 7-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/12/11.

This application contains claims 7-9 drawn to inventions nonelected with traverse in the reply filed on 4/12/11. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01

Claim Rejections - 35 U.S.C. § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 2 & 5-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The specification describes on pages 2-3 that "C75 treatment inactivates and dephosphorylates AMPK…", that Fig. 7 shows "administration of C75 leads to significant neuroprotection", and that Fig. 6 shows that "compound C treatment causes a significant decrease in regional and total stroke volume". Pages 6 and 16-17 then state that "administration of the AMPK inhibitor compound C, or the FAS inhibitor C75, provided significant neuroprotection in our model". In contrast, not a single other "AMPK inhibitor" is described that "is not C75 or Compound C" (i.e., as it relates to claim 5), nor is a single "compound… not a peptide or other biological or biologically-derived material" described (i.e., as it relates to claim 2), nor is a single "small molecule" (i.e., as it relates to claim 6) described , which demonstrates that Applicants are not in possession of the genus of "AMPK inhibitors" required to practice the currently claimed method of "neuroprotection". The issue then becomes that without structurally defining what constitutes the claimed genus of "compounds" that are

putative "AMPK inhibitors" that reasonably are involved in "neuroprotection" of neurons containing glutamate receptors, one of ordinary skill in the art would not know when they are in possession of the "compounds" required to practice the currently claimed method. For example, one skilled in the art cannot even reasonably visualize or predict what critical amino acid residues would structurally characterize the genus of "compounds" that would be peptides, let alone what critical residues would constitute "non-peptides, other biologically-derived material or small molecules, as claimed.

To provide evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. Thus, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description for use of the claimed genus of AMPK inhibitors required to practice the currently claimed method because one skilled in the art cannot structurally visualized any functional generic "compound" peptide or nonpeptide, small molecule, or biologically-derived material, except for compound C and C75. In other words, because the specification fails to provide a representative number of species to show applicant is in possession of using the currently undefined genus of compounds required to practice the currently generic method, the written description requirements under 35 U.S.C. 112, first paragraph are not met. See MPEP 2163.

Accordingly, *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111, 1117, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, *as of the filing date*

sought, he or she was in possession *of the claimed invention*". "The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed* [emphasis added]".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 & 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tracey et al (U.S. Patent (IDS Ref # 3).

Tracey et al. teach treatment of ischemic tissue damage with non-peptide metabolic modulators, such as AMPK inhibitors (i.e., column 3 (lines 14-20) & column 8 (lines 15-19, 29-30 & 62-65); as it relates to claims 1-2 & 5-6).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 & 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tracey et al (U.S. Patent 6,423,705), in view of Kim et al. (2002; IDS Ref #6) .

Tracey is as described above. However, Tracey et al do not mention use of the AMPK inhibitors, compound C or C75.

Kim et al teach administration of the AMPK inhibitor C75 to mouse subjects (e.g., pgs. E867, E868, E870 & E872) which effects FAS expression in neurons (i.e., as it relates to claim 3). However, Kin et al do not teach administration of C75 to subjects experiencing a stroke.

It would have been obvious to one of ordinary skill in the art at the time of filing Applicants' invention to use the AMPK inhibitor of Kim in Tracey's method of treating ischemia with AMPK inhibitors with a reasonable expectation of success.

5. Claims 1-2 & 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tracey et al (U.S. Patent 6,423,705), in view of Leon et al. (2002; IDS Ref #7) .

Tracey is as described above. However, Tracey et al do not mention use of the AMPK inhibitors, compound C or C75.

Leon et al teach administration of the AMPK inhibitor Compound C to rat subjects (e.g., pgs. 525-526) which effected excitation in glutamatergic neurons administered melatonin (i.e., as

it relates to claim 4). However, Leon et al do not teach administration of Compound C to subjects experiencing a stroke.

It would have been obvious to one of ordinary skill in the art at the time of filing Applicants' invention to use the AMPK inhibitor of Leon in Tracey's method of treating ischemia with AMPK inhibitors with a reasonable expectation of success.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Robert Hayes whose telephone number is (571) 272-0885. The examiner can normally be reached on Monday through Thursday from 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ali Salimi, can be reached on (571) 272-0909. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-4797 (toll-free).

/ROBERT C. HAYES/
Primary Examiner, Art Unit 1649
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